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Estimation of contemporary observed variations of air temperature and wind speed in the troposphere of the Northern Hemisphere

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Abstract

© 2014, Allerton Press, Inc. Carried out is the statistical analysis of contemporary observed variations of air temperature and wind speed in the troposphere of the Northern Hemisphere based on the data on global surface air temperature for 1850–2013 obtained from the University of East Anglia Climate Research Unit (HadCRUT4) and NCEP/NCAR reanalysis (1948–2013). Revealed are the long-term trends of air temperature and wind speed at different constant-pressure levels. Established is the anticipatory role of the zonal atmospheric circulation in the long-term variability of air temperature in the lower troposphere averaged for the zone of 30°–70° N. According to the results of correlation analysis, in some areas of the Northern Hemisphere the contribution of the wind speed to air temperature variability makes up not less than 60%.

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